IN THE CLAIMS

Please amend Claims 1, 3, 4, and 7-10, and add new Claims 11-37 as follows:

1. (Currently amended) A method of optimizing communication over a high-speed serial bus by minimizing the delay between packets transmitted over the bus, the method comprising:

sending a ping from a first node to a second node;

sending a response from the second node to the first node after receiving the ping;

calculating a maximum round trip delay ~~between a first PHY and a second PHY connected on the bus by pinging~~ between a first PHY of the first node and a second PHY of the second node based at least in part upon a jitter, and further based at least in part upon the response sent to the first node;

sending via a bus manager ~~sending~~ a configuration packet to all PHYs connected on the bus, the configuration packet containing a minimum gap_count parameter value, the minimum gap_count parameter value derived from the maximum round trip delay between the first PHY and the second PHY; and

sending via all PHYs connected on the ~~sending~~ packets over the bus using the minimum gap _count parameter value as a delay between packets.

2. (Previously presented) The method of claim 1, further comprising preserving an ack/iso gap between packets, wherein a first PHY sent a most recently-sent packet and a second PHY is responding to the first PHY.

3. (Currently amended) The method of claim 2, wherein the second PHY is adapted to respond ~~responding~~ with an ack packet.

4. (Currently amended) The method of claim 2, wherein the second PHY is adapted to respond ~~responding~~ with an isochronous arbitration packet.

5. (Previously presented) The method of claim 1, wherein the first PHY sends an isochronous packet, observes a sub action gap, and initiates an arbitration indication.

6. (Previously presented) The method of claim 1, wherein the first PHY sends an asynchronous packet, observes an arbitration reset gap, and initiates an arbitration indication.

7. (Currently amended) The method of claim 1, wherein calculating the round trip delay comprises <u>executing</u> a ping command ~~executed~~ at a link layer ~~level~~ on [[a]] <u>said first</u> node ~~having a first PHY and is~~ directed at a link layer on [[a]] <u>said second</u> node ~~having a second PHY~~.

8. (Currently amended) The method of claim 7, wherein calculating the round trip delay comprises calculating a round trip delay from a first link on the <u>first</u> node ~~having the first PHY~~ and a second link on the <u>second</u> node ~~having the second PHY~~.

9. (Currently amended) The method of claim 1, wherein the second PHY has a subaction gap timeout value that is greater than ~~the~~ <u>an</u> IDLE value that can occur within a subaction and an isochronous interval on the high-speed serial bus.

10. (Currently amended) A computer-readable medium containing instructions which, when executed by a processor, minimize the delay between packets transmitted over a high-speed serial bus, by:

<u>sending a ping from a first node to a second node;</u>

<u>send a response to the ping from the second node to the first node;</u>

calculating a maximum round trip delay ~~between a first PHY and a second PHY connected on the bus by pinging~~ <u>between a first PHY of the first node and a second PHY of the second node based at least in part upon a jitter determination, and based at least in part upon the response sent to the first node</u>; and

sending a configuration packet to all PHYs connected on the bus, the configuration packet containing a minimum gap_count parameter value, the minimum gap_count parameter value derived from the maximum round trip delay between the first PHY and the second PHY.

11. (New) The method of Claim 1, wherein the response comprises a self-ID packet.

12. (New) The method of Claim 1, wherein the jitter determination relates instantaneous measurements of a round trip delay to the maximum round trip delay between the first PHY and the second PHY.

13. (New) The method of Claim 1, wherein the jitter is related to both (i) a delay in propagating an arbitration response, and (ii) a delay associated with transmitting data from one PHY port to another.

14. (New) The method of Claim 13, wherein the arbitration response delay comprises the delay in propagating arbitration indication received from a first port of the second PHY to a second port of the second PHY.

15. (New) The method of Claim 13, wherein the arbitration response delay comprises the delay in propagating arbitration indication received from a first port of the first PHY to a second port of the first PHY.

16. (New) The method of Claim 13, wherein the a delay associated with transmitting data from one PHY port to another comprises a time measured from receipt of a first data bit at a first port of the second PHY to retransmission of the same bit at a second port of the second PHY.

17. (New) The method of Claim 13, wherein the a delay associated with transmitting data from one PHY port to another comprises a time measured from receipt of a first data bit at a first port of the first PHY to retransmission of the same bit at a second port of the first PHY.

18. (New) The method of Claim 1, wherein at least one of said first PHY and second PHY comprises a first pair of ports and a second pair of ports, wherein the jitter is defined as being greater than or equal to the absolute value of a total quantity, the total quantity defined as the difference between a first quantity and a second quantity; and

wherein the first quantity comprises the sum of a first subquantity and a second subquantity, the first subquantity consisting of a PHY delay between the first ordered pair of ports divided by two, the second subquantity consisting of an arbitration response delay between the first ordered pair of ports divided by two.

19. (New) The method of Claim 18, wherein the second quantity comprises the sum of a third subquantity and a fourth subquantity, the third subquantity consisting of a PHY delay between the second ordered pair of ports divided by two, and the fourth subquantity consisting of an arbitration response delay between the second ordered pair of ports divided by two.

20. (New) The method of Claim 1, wherein all PHYs of the high-speed serial bus comprise a subaction gap detection time that is greater than a maximum idle value that can occur within a subaction.

21. (New) The method of Claim 1, wherein alls PHYs of the high-speed serial bus comprise an arbitration reset gap timeout value that is greater than the largest subaction gap that can occur over the high-speed serial bus.

22. (New) The method of Claim 10, wherein the response comprises a self-identification packet.

23. (New) The method of Claim 10, wherein the jitter determination relates instantaneous

measurements of a round trip delay to the maximum round trip delay between the first PHY and the second PHY.

24. (New) The method of Claim 10, wherein the jitter determination is related to both (i) a delay in propagating an arbitration response, and (ii) a delay associated with transmitting data from one PHY port to another.

25. (New) The method of Claim 10, wherein alls PHYs of the high-speed serial bus comprise a subaction gap detection time that is greater than the maximum idle value that can occur within a subaction.

26. (New) The method of Claim 10, wherein alls PHYs of the high-speed serial bus comprise an arbitration reset gap timeout value that is greater than the largest subaction gap that can occur over the high-speed serial bus.

27. (New) A device for use in a first node of a serial bus, the device comprising:

a first module adapted to ping to a second node;

a second module adapted to receive a ping response from the second node;

a third module adapted to calculate a maximum round trip delay between a first PHY associated with the first node and a second PHY associated with the second node based at least in part upon a jitter value, and further based at least in part on the ping response sent to the second module; and

a fourth module adapted to send a configuration packet to all PHYs on the serial bus, the configuration packet containing a gap count, the gap count derived from the maximum round trip delay between the first PHY and the second PHY.

28. (New) The device of Claim 27, wherein the response comprises a self-identification packet.

29. (New) The device of Claim 27, wherein the jitter value is based at least in part on instantaneous measurements of a round trip delay and the maximum round trip delay between the first PHY and the second PHY.

30. (New) The device of Claim 27, wherein the jitter value is related to both an ARB_RESPONSE_DELAY and a PHY_DELAY of a target PHY.

31. (New) The device of Claim 27, wherein at least one of said first PHY and second PHY comprises a first pair of ports and a second pair of ports, wherein the jitter value is defined

as being greater than or equal to the absolute value of a total quantity, the total quantity defined as the difference between a first quantity and a second quantity; and

wherein the first quantity comprises the sum of a first subquantity and a second subquantity, the first subquantity consisting of a PHY delay between the first ordered pair of ports divided by two, the second subquantity consisting of an arbitration response delay between the first ordered pair of ports divided by two.

32. (New) The device of Claim 31, wherein the second quantity comprises the sum of a third subquantity and a fourth subquantity, the third subquantity consisting of a PHY delay between the second ordered pair of ports divided by two, and the fourth subquantity consisting of an arbitration response delay between the second ordered pair of ports divided by two.

33. (New) The device of Claim 27, wherein all PHYs of the high-speed serial bus comprise a subaction gap detection time that is greater than a maximum idle value that can occur within a subaction.

34. (New) The device of Claim 27, wherein alls PHYs of the high-speed serial bus comprise an arbitration reset gap timeout value that is greater than the largest subaction gap that can occur over the high-speed serial bus.

35. (New) The device of Claim 27, wherein the jitter value is related to both (i) a delay in propagating an arbitration response, and (ii) a delay associated with transmitting data from one PHY port to another.

36. (New) The device of Claim 27, wherein alls PHYs of the high-speed serial bus comprise a subaction gap detection time that is greater than the maximum idle value that can occur within a subaction.

37. (New) The device of Claim 27, wherein alls PHYs of the high-speed serial bus comprise an arbitration reset gap timeout value that is greater than the largest subaction gap that can occur over the high-speed serial bus.